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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,954	07/11/2001	Hagen Eckert	4100-0127P	6066
2292	7590	01/11/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			ODOM, CURTIS B	
			ART UNIT	PAPER NUMBER
			2634	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/856,954	Applicant(s) ECKERT, HAGEN	
	Examiner Curtis B. Odom	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amdt filed on 10/11/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 October 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION*Drawings*

1. The drawings are objected to because in Fig. 1, the arrow should be pointing to the demodulator (block 2) from the error correction stage (block 10). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in view of Nishimura (U. S. Patent No. 6, 173, 020).

Regarding claim 1, applicant discloses as prior art an arrangement (Fig. 1) for measurement demodulation and modulation error measurement of a digitally modulated receive signal, with a receive filter (Fig. 1, block 1), an error correction stage (Fig. 1, block 10), a demodulator (Fig. 1, block 2) for determining ideal symbol samples, wherein measuring signals are output from the demodulator and the error correction stage (instant specification, page 1, lines 33-36).

wherein a first measuring signal is filtered in a reference filter (Fig. 1, block 13) and a second measuring signal is filtered using a weighting filtered function (Fig. 1, block 11), the first measuring signal and the second measuring signal are then evaluated in a following evaluation circuit (Fig. 1, block 4), and

wherein the second measuring signal of the demodulator is filtered in a measuring filter (Fig. 1, block 11).

The applicant does not disclose that the error compensation performed to produce the first measuring signal is performed internally in the demodulator (as oppose to externally as shown in Fig. 1) and the weighting filter function is formed by cascaded filter functions of the receive filter and the measuring filter.

However, Nishimura discloses a demodulation unit which includes error correction of a digitally modulated signal (Abstract and column 4, lines 32-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the demodulator disclosed as prior art could have also incorporated the error correction disclosed in the prior art in the same manner as taught by Nishimura since implementing the error correction in the demodulator would decrease the size of the hardware and allow for simpler implementation since there would be less separate hardware components.

The applicant also does not specifically disclose as prior art the weighting filter function is formed by cascaded filter functions of the receive filter and the measuring filter. However, after reviewing the specification, it is the understanding of the examiner that the weighting filter disclosed in prior art is functionally equivalent to the measuring filter recited in the claim. The instant specification states that the weighting filter of the prior art is designed in accordance with the desired weighting function, for example in accordance with the ETSI specification (page 2, lines 16-18). The instant specification also states that the measuring filter recited in the claims has the filter function "weighting filter = receive filter*measuring filter" which is the desired weighting filter function in accordance with the ETSI specification (page 3, line 35-page 4, line 10). Thus, it is the understanding the examiner that since that weighting filter disclosed as prior art can be designed in accordance with the desired weighing filter function in accordance with

Art Unit: 2634

the ETSI specification, that the weighting filter of disclosed as prior art is equivalent to the measuring filter recited in the claim and applies the weighting filter function as recited in the claim. Thus, claim 1 does not constitute patentability.

Regarding claim 2, which inherits the limitations of claim 1, applicant does not specifically disclose as prior art the weighting filtering function is determined by the convolution operation relationship $\text{weighting filter} = \text{receive filter} * \text{measuring filter}$.

However, the applicant does disclose as prior art a weighting filter equivalent to the measuring filter which applies a weighting filter function in accordance with a desired weighting function (page 2, lines 16-18). Therefore, it would have been obvious to one skilled in the art at the time the invention was made that since the applicant also discloses a receive filter as prior art (Fig. 1, block 1), that the weighting filter function could have been determined by $\text{weighting filter} = \text{receive filter} * \text{measuring (weighting) filter}$ since this function is the desired weighting function as disclosed in the instant specification (page 3, line 35-page 4, line 10). Thus, it is the understanding of the examiner that the weighting filter disclosed as prior art could have applied this filter function.

Regarding claim 3, which inherits the limitations of claim 1, applicant discloses as prior art the receive filter is designed according to the requirements of the demodulator for supplied signal characteristics (page 1, lines 29-33), wherein matched filter is designed in accordance with the requirements of the demodulator for supplied signal characteristics (see instant specification, page 3, lines 24-26).

Regarding claim 5, applicant discloses as prior art an arrangement for measurement demodulation and modulation error measurement of a digitally modulated signal, the arrangement comprising:

a receive filter (Fig. 1, block 1) for receiving the digitally modulated signal and for filtering the digitally modulated signal;

an error correction stage (Fig. 1, block 10) for performing error correction to the received digitally modulated signal and outputting a first measuring signal;

a demodulator (Fig. 1, block 2) for receiving the filtered digitally modulated signal from the receive filter for determining ideal symbol samples from a first measuring signal and outputting a second measuring signal;

a reference filter (Fig. 1, block 13) for receiving the second measuring signal from the demodulator and for filtering the second measuring signal;

a measuring filter (Fig. 1, block 11) for receiving the first measuring signal for weighting filtering the first measuring signal; and

an evaluation circuit (Fig. 1, block 4) for evaluating the filtered second measuring signal from the reference filter and the weighting filtered first measuring signal from the measuring filter,

The applicant does not disclose that the error compensation performed to produce the first measuring signal is performed internally in the demodulator (as oppose to externally as shown in Fig. 1) and the weighting filter function is formed by cascaded filter functions of the receive filter and the measuring filter.

However, Nishimura discloses a demodulation unit which includes error correction of a digitally modulated signal (Abstract and column 4, lines 32-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the demodulator disclosed as prior art could have also incorporated the error correction disclosed in the prior art in the same manner as taught by Nishimura since implementing the error correction in the demodulator would decrease the size of the hardware and allow for simpler implementation since there would be less separate hardware components.

The applicant also does not specifically disclose as prior art the weighting filter function is formed by cascaded filter functions of the receive filter and the measuring filter. However, after reviewing the specification, it is the understanding of the examiner that the weighting filter disclosed in prior art is functionally equivalent to the measuring filter recited in the claim. The instant specification states that the weighting filter of the prior art is designed in accordance with the desired weighting function, for example in accordance with the ETSI specification (page 2, lines 16-18). The instant specification also states that the measuring filter recited in the claims has the filter function "weighting filter = receive filter*measuring filter" which is the desired weighting filter function in accordance with the ETSI specification (page 3, line 35-page 4, line 10). Thus, it is the understanding the examiner that since that weighting filter disclosed as prior art can be designed in accordance with the desired weighing filter function in accordance with the ETSI specification, that the weighting filter of disclosed as prior art is equivalent to the measuring filter recited in the claim and applies the weighting filter function as recited in the claim. Thus, claim 1 does not constitute patentability.

Art Unit: 2634

Regarding claims 6 and 7, the claimed apparatus includes features corresponding to the above subject matter mentioned in the rejection of claims 2 and 3 which is applicable hereto.

Regarding claim 9, applicant discloses as prior art the reference filter receives the second measuring signal directly from the demodulator (Fig. 1, block 13, page 1, lines 33-39 of the instant specification). The applicant does not specifically disclose as prior art that the measuring (weighting) filter receives the first measuring signal directly from the demodulator. However, the applicant does disclose as prior art that the measuring (weighting) filter receives the first measuring signal directly from an error correction stage. Nishimura further discloses a demodulation unit which includes an error correction stage to correct errors of a digitally modulated signal (Abstract and column 4, lines 32-44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made that the demodulator disclosed as prior art could have also incorporated the error correction disclosed in the prior art in the same manner as taught by Nishimura since implementing the error correction in the demodulator would decrease the size of the hardware and allow for simpler implementation since there would be less separate hardware components. This would allow for the first measuring signal to be directly received from the demodulator.

Regarding claim 10, the claimed method includes features corresponding to the above subject matter mentioned in the rejection of claims 5 and 9 which is applicable hereto.

4. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art in view of Nishimura (U. S. Patent No. 6, 173, 020) and in further view of Tsuda (U. S. Patent No. 5, 974, 098). Regarding claims 4 and 8, applicant's admitted

Art Unit: 2634

prior art and Nishimura disclose all the limitations of claims 4 and 8 except the receive filter is designed so that ISI-free samples are fed to the demodulator.

Tsuda discloses a filter which receives a modulated digitally modulated signal designed so that ISI-free samples are fed to a demodulator (column 6, lines 10-21). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the receive filter of the applicant's admitted prior art with the teachings of Tsuda and remove ISI from the samples before the demodulation since ISI can cause a loss of information during processing of the signal.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2634

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
January 6, 2006


CHIEH M. FAN
SUPERVISORY PATENT EXAMINER